

# International Journal of Man-Machine Studies

Volume 9, 1977

*Executive Editors*

**B. R. Gaines and D. R. Hill**

*Editorial Board*

**J. H. Andreae**

**M. A. Arbib**

**J. S. Brown**

**M. Eden**

**H. Fujisaki**

**J. L. Gedyé**

**J. Hatvany**

**W. Jassem**

**G. J. Klir**

**W. Lawrence**

**V. A. Lvov**

**G. Pask**

**M. E. Sime**

**D. H. Sleeman**

**R. D. Smallwood**

**I. Witten**

**K. L. Zinn**

**P. I. Zorkoczy**



*Academic Press*

*London New York San Francisco*

*A Subsidiary of Harcourt Brace Jovanovich, Publishers*

U. I. C. C.  
MAR 16 1978  
LIBRARY

Copyright © 1977 by Academic Press Inc. (London) Ltd.

ALL RIGHTS RESERVED

No part of this volume may be reproduced in any form, by photostat, microfilm, or any other means, without written permission from the publishers.

U.C.C.  
MAR 18 1978  
LIBRARY

Printed in Great Britain



# Contents of Volume 9

## NUMBER 1, JANUARY 1977

- Gaines, B. R. and Kohout, L. J.** The fuzzy decade: a bibliography of fuzzy systems and closely related topics . . . . . 1
- Lucas, R. W.** A study of patients' attitudes to computer interrogation . . . 69
- Hoc, J.-M.** Role of mental representation in learning a programming language . 87
- Sime, M. E., Green, T. R. G. and Guest, D. J.** Scope marking in computer conditionals—a psychological evaluation . . . . . 107
- Sime, M. E., Arblaster, A. T. and Green, T. R. G.** Reducing programming errors in nested conditionals by prescribing a writing procedure . . . . . 119

## NUMBER 2, MARCH 1977

- Brachman, R. J.** What's in a concept: structural foundations for semantic networks 127
- Harris, L. R.** A system for primitive natural language acquisition . . . . 153
- Addis, T. R.** Machine understanding of natural language . . . . . 207
- Langholz, G.** Interaction between stochastic automata and random environment . 223
- Furutani, N.** A new approach to traffic behaviour: III. Steering behaviour and the butterfly catastrophe . . . . . 233



## NUMBER 3, MAY 1977

<b>McCord, M. C.</b> Procedural systemic grammars . . . . .	255
<b>Haralambopoulos, G. and Nagy, G.</b> Profile of a university computer user community	287
<b>Mulhall, D. J.</b> The representation of personal relationships: an automated system	315
<b>Hill, D. R. and Reid, N. A.</b> An experiment on the perception of intonational features . . . . .	337
<b>Baldwin, J. T. and Siklóssy, L.</b> An unobtrusive computer monitor for multi-step problem solving . . . . .	349
<b>Tappert, C. C.</b> A Markov model acoustic phonetic component for automatic speech recognition . . . . .	363

## NUMBER 4, JULY 1977

<b>Yager, R. R.</b> Multiple objective decision-making using fuzzy sets . . . . .	375
<b>Pinkava, V.</b> On the nature of some logical paradoxes . . . . .	383
<b>Feyock, S.</b> Transition diagram-based CAI/HELP systems . . . . .	399
<b>Hájek, P. and Havránek, T.</b> On generation of inductive hypotheses . . . . .	415
<b>Havránek, T., Chyba, M. and Pokorný, D.</b> Processing sociological data by the GUHA method—an example . . . . .	439
<b>Witten, I. H. and Madams, P. H. C.</b> The Telephone Enquiry Service: a man-machine system using synthetic speech . . . . .	449
<b>Shneiderman, B.</b> Measuring computer program quality and comprehension . . . . .	465
<b>Kelly, M. J. and Chapanis, A.</b> Limited vocabulary natural language dialogue . . . . .	479
<b>Weizenbaum, J.</b> Book review: a response to Donald Michie . . . . .	503

NUMBER 5, SEPTEMBER 1977

Editorial . . . . . 507

Miller, L. A. and Thomas, J. C. Jr. Behavioral issues in the use of interactive systems . . . . . 509

Lowrance, J. D. and Friedman, D. P. Hendrix's model for simultaneous actions and continuous processes: an introduction and implementation . . . . . 537

Salt, N. F. CAI with a restricted vocabulary . . . . . 583

Klir, G. J. and Uyttenhove, H. J. J. On the problem of computer-aided structure identification: some experimental observations and resulting guidelines . . . . . 593

Book reviews . . . . . 629

NUMBER 6, NOVEMBER 1977

Tucker, W. H., Bates, R. H. T., Frykberg, S. D., Howarth, R. J., Kennedy, W. K., Lamb, M. R. and Vaughan, R. G. An interactive aid for musicians . . . . . 635

Rhodes, M. L. and Klinger, A. Conversational text input for modifying graphics facial changes . . . . . 653

Fox, J. Medical computing and the user . . . . . 669

Gessner, U., Welter, R., Kuenzli, H., Horisberger, B. and Ulich, E. Analyses of patient-oriented, equipment-bound activities in the hospital . . . . . 687

Harris, L. R. User oriented data base query with the ROBOT natural language query system . . . . . 697

Witten, I. H. Exploring, modelling and controlling discrete sequential environments 715

Brooks, R. Towards a theory of the cognitive processes in computer programming 737

Book review . . . . . 753

THEORY OF THE EARTH

CHAPTER I

OF THE ORIGIN AND DEVELOPMENT OF THE EARTH

THE EARTH IS A SPHERICAL BODY, THE SURFACE OF WHICH IS COVERED BY A THIN LAYER OF WATER, AND IS SURROUNDED BY A THICK ATMO-  
SPHERE OF AIR.

THE EARTH IS DIVIDED INTO TWO MAIN PARTS, THE LAND AND THE WATER.

THE LAND IS DIVIDED INTO SEVERAL CONTINENTS, AND THE WATER INTO SEVERAL OCEANS.

THE EARTH IS COVERED BY A THICK LAYER OF SOIL, WHICH IS THE RESULT OF THE DECOMPOSITION OF ROCKS.

THE EARTH IS COVERED BY A THICK LAYER OF PLANTS, WHICH ARE THE RESULT OF THE GROWTH OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF ANIMALS, WHICH ARE THE RESULT OF THE REPRODUCTION OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF HUMANS, WHO ARE THE RESULT OF THE REPRODUCTION OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF PLANTS, WHICH ARE THE RESULT OF THE GROWTH OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF ANIMALS, WHICH ARE THE RESULT OF THE REPRODUCTION OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF HUMANS, WHO ARE THE RESULT OF THE REPRODUCTION OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF PLANTS, WHICH ARE THE RESULT OF THE GROWTH OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF ANIMALS, WHICH ARE THE RESULT OF THE REPRODUCTION OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF HUMANS, WHO ARE THE RESULT OF THE REPRODUCTION OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF PLANTS, WHICH ARE THE RESULT OF THE GROWTH OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF ANIMALS, WHICH ARE THE RESULT OF THE REPRODUCTION OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF HUMANS, WHO ARE THE RESULT OF THE REPRODUCTION OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF PLANTS, WHICH ARE THE RESULT OF THE GROWTH OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF ANIMALS, WHICH ARE THE RESULT OF THE REPRODUCTION OF SEEDS.

THE EARTH IS COVERED BY A THICK LAYER OF HUMANS, WHO ARE THE RESULT OF THE REPRODUCTION OF SEEDS.



